Herbert M. Kulman

TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION
UNIVERSITY FARM ST. PAUL 1, MINNESOTA

No. 396

The Jack-Pine Budworm in Michigan -1953

The jack-pine budworm (Choristoneura sp.), which occurred in outbreak numbers in localized areas of Michigan from 1949 through 1951, continued to defoliate jack pine on the Huron National Forest and adjacent state forests in the Lower Peninsula in 1952. Budworm populations on the Hiawatha National Forest in the Upper Peninsula declined and there was little defoliation.

Substantial tree mortality associated with the budworm was observed on the Huron National Forest in the survey made after the 1951 defoliation period (see Technical Note No. 376). Mortality in some tree classes was so critical that forest managers were alerted to the menace.

To determine whether additional losses had occurred after the budworm defoliation period in 1952, the infested area was resurveyed in cooperation with the Forest Service. The plan of survey was similar to that designed in 1951 to produce results statistically accurate to 8 percent of the total volume on the 109,000 acres of jack-pine type within the forest boundaries.

Budworm defoliation was light during 1952 on the 42 fifth-acre study plots included in the survey. Losses in jack-pine stands infested with budworms in 1952 were essentially the same as in 1951 (see table).

Mortality Per Acre of Jack Pine Infested With Budworms

Tree size class	1951			1952		
	Number of trees killed		Percent of stand	Number of trees killed		Percent of stand
	Average	Range		Average	Range	
Poles 1/	0.2	0- 0.7	3	0.3	0.1- 0.8	3
4-inch saplings	10	0- 18	8	10	0 - 17	10
2-inch saplings	71	20-180	33	31	7 -105	22
Reproduction	30	2- 62	14	23	0 - 40	8

1/ Data for poles represent loss in cords rather than number of trees.

Again no correlation was apparent between the severity of budworm defoliation after three seasons and the mortality among poles, saplings, and reproduction. Little additional mortality is predicted if the budworm continues to decline in 1953. If severe defoliation recurs, however, it will result in increased losses in the smaller size classes and top killing among merchantable trees.

In areas of the most severe budworm defoliation continued encouragement of salvage cutting, and removal of suppressed and orchard-type jack pine are recommended. Surveys to follow the course of the outbreak will be conducted in 1953.

April 1953

DANIEL M. BENJAMIN, Entomologist
U.S. Bureau of Ent. and Plant Quarantine